Thermo Electron

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: Sulfuric Acid

SYNONYMS/PRODUCT: Electrolyte Acid, Gas Sensor
CHEMICAL FAMILY NAME: Inorganic Acids
FORMULA: H_2SO_4

Document Number: 27

PRODUCT USE:	Gas Detection Equipment
SUPPLIER/MANUFACTURER'S NAME:	THERMO ELECTRON
ADDRESS:	27 FORGE PARKWAY FRANKLIN, MA 02038 sales@thermogastech.com
EMERGENCY PHONE:	CHEMTREC: 1-800-535-5053
BUSINESS PHONE:	1-508-520-0430 1-866-282-0430 Fax : 1-508-520-1460

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV 1mg/m3	STEL 3mg/m3	PEL 1mg/m3	STEL	IDLH	OTHER
Sulfuric Acid, 40% solution	7664-93-9		The TLV and PEL listed for Sulfuric Acid denote ceiling limits. A sealed electrochemical sensor contains less than 2.7 ml. of aqueous solution.					
Water	7732-18-5		None of the trace impurities in this product contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalents standards.					

NE = Not Established C = Ceiling Limit

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Emergency responders must practice extreme caution.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this product is by ingestion.

INHALATION: Severe irritation or burns of respiratory system, pulmonary edema, and lung inflammation.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to Sulfuric Acid may cause the following health effects:

ACUTE: Due to the small volume of solution content of this product, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. May cause severe burns to skin and eye on contact.

CHRONIC: Chronic exposure to this material can cause lung damage.

TARGET ORGANS: Eyes, Skin Respiratory system, lungs, teeth, and kidneys.

HAZARDOUS MATERIAL INFORMATION SYSTEM

HEALTH	(BLUE)	3
FLAMMABILITY	(RED)	0
REACTIVITY	(YELLOW)	3
PROTECTIVE EQUIPMENT		4

EYES	RESPIRATORY	HANDS	BODY
See Section 8			

For routine industrial applications

4. FIRST-AID MEASURES

INGESTION: Call a physician. If swallowed, do not induce vomiting. If conscious, give large amounts of water.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Prompt action is essential.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing clothing and shoes. Wash clothing before re-use.

EYE CONTACT: In case of eye contact, immediately flush with plenty of water for at least 15 minutes.

Victim(s) who experience any adverse effect after over-exposure to this product must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

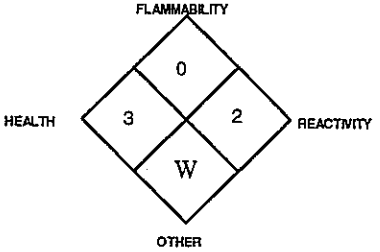
FLASH POINT, (method): Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):
Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: Use dry chemical or Carbon Dioxide. Do not use water.

NFPA RATING



5. FIRE-FIGHTING MEASURES (Continued)

UNUSUAL FIRE AND EXPLOSION HAZARDS: Reacts with most metals to produce hydrogen gas, which can form an explosive mixture with air. A violent exothermic reaction occurs with water. Sufficient heat may be produced to ignite combustible materials.

SPECIAL FIRE-FIGHTING PROCEDURES: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face-piece operated in positive pressure mode. Do not get water inside containers.

TOXIC GASES PRODUCED: Sulfur Dioxide, Hydrogen

6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Due to the small content of the cell, an accidental release of this product presents significantly less risk and other safety hazards than a similar release from a larger volume. However, as with any chemical release, extreme caution must be used during emergency response procedures. Proper protective equipment should be used. Adequate fire protection must be provided.

7. HANDLING and USE

Use safe chemical handling procedures. Wash hands after handling.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are needed under normal circumstances of use. As with all chemicals, use this product in well-ventilated areas.

RESPIRATORY PROTECTION: No special respiratory protection is required under normal circumstances of use. If airborne concentration exceeds TLV, a self-contained breathing apparatus is advised.

EYE PROTECTION: Safety glasses and face shield.

HAND PROTECTION: Rubber gloves are recommended.

BODY PROTECTION: Lab coat.

9. PHYSICAL and CHEMICAL PROPERTIES

BOILING POINT: N/A

MELTING POINT: N/A

SPECIFIC GRAVITY: 1.4

pH: 1.0

SOLUBILITY IN WATER: COMPLETE (100%)

MOLECULAR WEIGHT:

EVAPORATION RATE (nBuAc = 1): N/A

PHYSICAL STATE: Liquid.

ODOR THRESHOLD: Not applicable.

VAPOR PRESSURE @ 70°F (21.1°C) psig: N/A

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

APPEARANCE AND COLOR: Clear, colorless to yellow liquid, odorless.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of this product.

10. STABILITY and REACTIVITY

STABILITY: Normally stable.

DECOMPOSITION PRODUCTS: Hydrogen, oxides of sulfur.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Water, Most common metals, organic materials, strong reducing agents, combustible materials, strong bases, carbonates, sulfides, cyanides, strong oxidizing agents, carbides.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Moisture, Heat.

11. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations.

EPA Hazardous waste number: D002, D003 (Corrosive, Reactive waste)

12. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME:	Sulfuric Acid (with not more than 51% acid)
HAZARD CLASS NUMBER and DESCRIPTION:	8 (Corrosive)
UN IDENTIFICATION NUMBER:	UN 1830
PACKING GROUP:	II
DOT LABEL(S) REQUIRED:	Corrosive

SPECIAL SHIPPING INFORMATION: Transport in a sealed plastic bag.
TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

13. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: This product is subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

COMPOUND	SARA 302	SARA 304	SARA 313
Sulfuric Acid	NO	NO	YES

SARA Threshold Planning Quantity: Not applicable.
TSCA INVENTORY STATUS: Sulfuric Acid is listed on the TSCA Inventory.
CERCLA REPORTABLE QUANTITY (RQ): YES.

PREPARED BY:
Seatronics, Inc.
3235 Sunset Lane
Hatboro, PA 19040
(215) 441-0320